



UNITED STATES MARINE CORPS
TRAINING AND EDUCATION COMMAND
MARINE CORPS COMBAT DEVELOPMENT COMMAND
3300 RUSSELL ROAD
QUANTICO, VIRGINIA 22134-5027

IN REPLY REFER TO:

3570

C46R

03 DEC 2002

TECOM SAFETY OF USE MEMORANDUM 2-02

Subj: SAFETY OF USE MEMORANDUM; USE OF STEEL REACTIVE TARGETS
(SRT) AT CLOSE RANGES WITH SMALL ARMS

Ref: (a) MARADMIN 612/02
(b) MCO 3500.27A Operational Risk Management

Encl: (1) Drawing of Twenty-Degree Dispersion Area.
(2) Drawing of Multiple Stationary SRT When
Positioning SRT'S Parallel to the Firing Line.

1. Purpose. Per reference (a), this Safety Of Use Memorandum (SOUM) is intended to provide safety guidance and direction for USMC organizations training with Steel Reactive Targets (SRT) at close ranges (7 to 50 yards) with the following weapons: Pistol M9; Pistol Cal .45; and the Service Shotgun M1014. This Memorandum amplifies guidance provided in the MCO P3570.1_ series.

2. Capabilities. Approved and properly utilized SRT's provide effective, positive feedback for marksmanship training. SRT's provide a sense of realism, and can enhance overall marksmanship training.

3. Background. SRT's are currently being used on Marine Corps ranges without specific institutional guidance. SRT's have risk associated with them if they are not utilized properly or if improper steel is used. The guidance provided is based on empirical data collected from Marine Corps operational units and Federal Agencies.

4. Specifications and Safety Considerations. Insufficient steel hardness and improper use of SRT's may cause serious injury to personnel and/or damage to equipment.

a. Only SRT's with a certified Brennel hardness rating of 400 to 550 will be used for training by Marine Corps personnel.

(1) Manufacturers (commercial or organizational) of SRT's must provide a certificate of hardness to ensure the steel targets meet the minimum hardness rating of (AR 400). The certificate must remain on file as long as the targets are being

Subj: SAFETY OF USE MEMORANDUM; USE OF STEEL REACTIVE TARGETS
(SRT) AT CLOSE RANGES WITH SMALL ARMS

utilized by the installation. Steel with an abrasion resistant coating coupled with 500 Brinell hardness steel (AR 500) is considered optimum for safety and longevity of use.

(2) Homemade or unit constructed targets are not recommended due to inconsistency in design, functioning, and most importantly the uncertainty in steel quality or hardness. If homemade or unit constructed targets are used, the same criteria of steel hardness (listed above) must be met. The certification must be kept on file as long as the steel targets are being utilized.

b. Angle of deflection is defined as the perpendicular exit of bullet fragments from the target surface to the shooter. When a shooter is shooting directly at a target, the bullet splatter will angle off the target up to 20-degrees in all directions from the point of impact and travel up to 50 yards. 95% of all bullet fragments will exit the target within the 20-degree Dispersion Area as illustrated in enclosure (1). A stationary target with a twenty-degree forward cant (head forward of the body) produces the best angle of deflection with most consistency.

c. SRT's that are warped, dented, or cracked are considered unserviceable and will not be used. Extensively worn targets with dimples (slight surface depressions) that are 1/32" deep into the steel are also considered unserviceable and must be replaced. When the surface of the steel target is no longer flat and smooth, the targets provide an unpredictable splatter effect upon bullet impact.

d. Gimmick type targets like rotating Christmas Trees, or targets that flip back and forth, are not authorized because of the inability to control the angle of the target, and the angle of the splatter.

e. OSHA approved wrap-around impact resistant eyeglasses are mandatory. Long sleeve shirt and long trousers are recommended for all personnel.

f. Targets will not be shot at distances closer than 7 yards for pistol and 10 yards for shotgun ("00" buckshot only).

g. 12 Gauge Slug ammunition will not be fired at steel targets at distances of 50 yards or closer.

Subj: SAFETY OF USE MEMORANDUM; USE OF STEEL REACTIVE TARGETS
(SRT) AT CLOSE RANGES WITH SMALL ARMS

5. Responsibilities

a. The Commander is ultimately responsible for the safety of all training. In the case of SRT training, he will be assisted by a certified SRT RSO.

b. Commanders of installations to be used for training with SRT's will conduct an Operational Risk Assessment (deliberate) in accordance with reference (b) prior to authorizing their use.

c. Installation Commanders will publish Standard Operating Procedures (SOP) to address the inherent hazards associated with shooting on SRT's.

d. Installation Commanders will establish a Range Safety Officers' (RSO) program that specifically addresses SRT safety and training requirements.

e. Upon completion of the RSO program, Installation Commanders will certify Marine Staff Sergeants (and above), or other service equivalent, as Steel Reactive Target Range Safety Officer (SRT RSO).

f. The duties of the SRT RSO will be set forth in the Installation SOP as outlined below. This listing is not considered to be all-inclusive.

(1) Before Firing

(a) Ensure that USMC organizations and personnel use SRT's that have a certified Brennel hardness rating of 400 to 550, and the SRT's are serviceable and operate as designed.

(b) Ensure that only USMC procured ammunition with a Department of Defense Identification Code (DoDIC) are used on the SRT's.

(c) Ensure that all personnel on the range and within 50 yards of the firing line wear wrap-around eye protection.

(d) Place targets on soft sandy-type soil or place an absorbing material (sand box) in front of the target to absorb the splatter, and prevent it from ricocheting off the ground. If more than one portable target is to be used, the targets will be set in a fashion so that the splatter from one target will not ricochet off the next. Each target must be

Subj: SAFETY OF USE MEMORANDUM; USE OF STEEL REACTIVE TARGETS
(SRT) AT CLOSE RANGES WITH SMALL ARMS

placed with the direction of fire and the angle of deflection taken into consideration.

(e) When multiple stationary SRT's are in a line, careful consideration of the 20-degree Dispersion Area must be taken into account. The number of shooters on the firing line may have to be limited at closer distances to keep all personnel out of the 20-degree Dispersion Area as illustrated in Enclosure (2).

(f) Ensure all targets are adjusted to fall with minimal bullet impact. Swinging and rotating targets must move freely and operate as intended.

(g) Ensure all personnel not shooting remain 50 yards behind the firing line. The RSO will remain directly behind the shooter(s) during firing.

(2) During Firing

(a) Ensure that qualified medical personnel and appropriate medical equipment are available during all training exercises.

(b) Ensure all personnel remain clear of the 20-degree Dispersion Area from each target.

(c) Ensure targets are refaced with paint only. "Target slicking" is prohibited (applying grease or oil to the target face).

(d) Ensure portable SRT's do not move or rotate during training, which will change the 20-degree Dispersion Area(s) of the targets.

(e) Ensure that a MINIMUM safe engagement distance(s) from the muzzle to the SRT is established and maintained for each weapon system used. (See 4g above)

(f) Ensure the SRT remain adjusted to operate properly upon impact.

(3) After Firing

(a) Reface SRT's with a coat of paint and lubricate all moving parts and mechanisms.

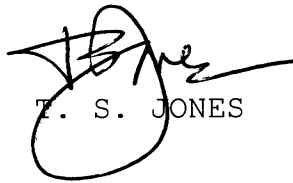
Subj: SAFETY OF USE MEMORANDUM; USE OF STEEL REACTIVE TARGETS
(SRT) AT CLOSE RANGES WITH SMALL ARMS

(b) Inspect SRT's for wear and serviceability.

6. Applicability. This SOUM is USMC specific and applicable to the USMC total force.

7. Cancellation. This SOUM will remain in effect until it is cancelled or updated by this office.

8. Point of Contact. Point of contact for this SOUM is CWO4 J. L. Pereira, Range Management Officer, TECOM (C46R) at DSN 278-6999 or commercial (730) 784-6999.



T. S. JONES

Distribution:

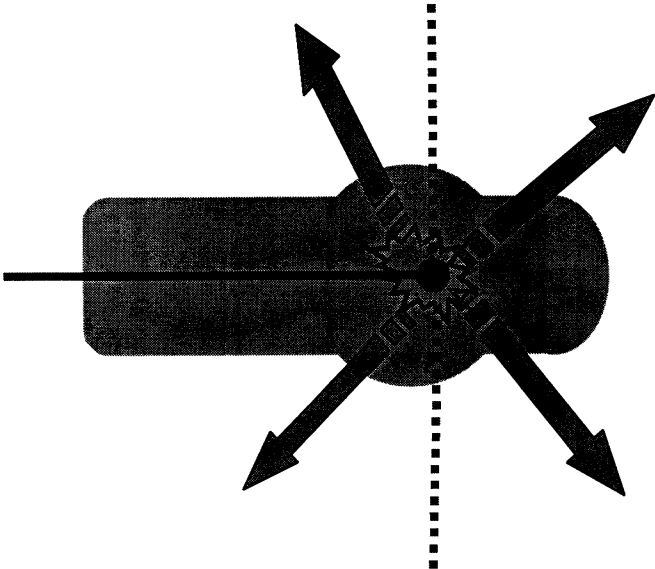
COMMARFORPAC CAMP SMITH HI	CG MCB QUANTICO VA
COMMARFORLANT NORFOLK VA	CG MCB CAMP BUTLER JA
COMMARFORRES NEW ORLEANS LA	CG MCRD ERR PARRIS ISLAND SC
CG MCCDC QUANTICO VA	MCSFBN NORFOLK VA
CG TECOM QUANTICO VA	MCMWTC BRIDGEPORT CA
CG MCRC QUANTICO VA	HQBN HQMC ARLINGTON VA
CG MCRSC KANSAS CITY MO	MARBKS WASHINGTON DC
COMCABEAST MCAS CHERRY PT NC	BIC JACKSONVILLE, FL
COMMARCORSSCOM QUANTICO VA	MCAS BEAUFORT SC
COMMARCORDMATCOM ALBANY GA	MCAS IWAKUNI JA
COMMARCORLOGBASES ALBANY GA	MCAS FUTENMA JA
COMMARCORBASESJAPAN	MCAS CAMP PENDLETON CA
COMTRNGCMD QUANTICO VA	MCAS YUMA AZ
CG MCB CAMP PENDLETON CA	MCAF TUSTIN CA
CG MCB CAMP LEJEUNE NC	MCAS NEW RIVER NC
CG MCRD/WRR SAN DIEGO CA	MCSA KANSAS CITY MO
CG MCAS MIRAMAR SAN DIEGO CA	MCLB BARSTOW
CG MCBH KANEOHE BAY HI	
CG MAGTF TRNGCOM TWENTYNINE PALMS CA	

Copy to:

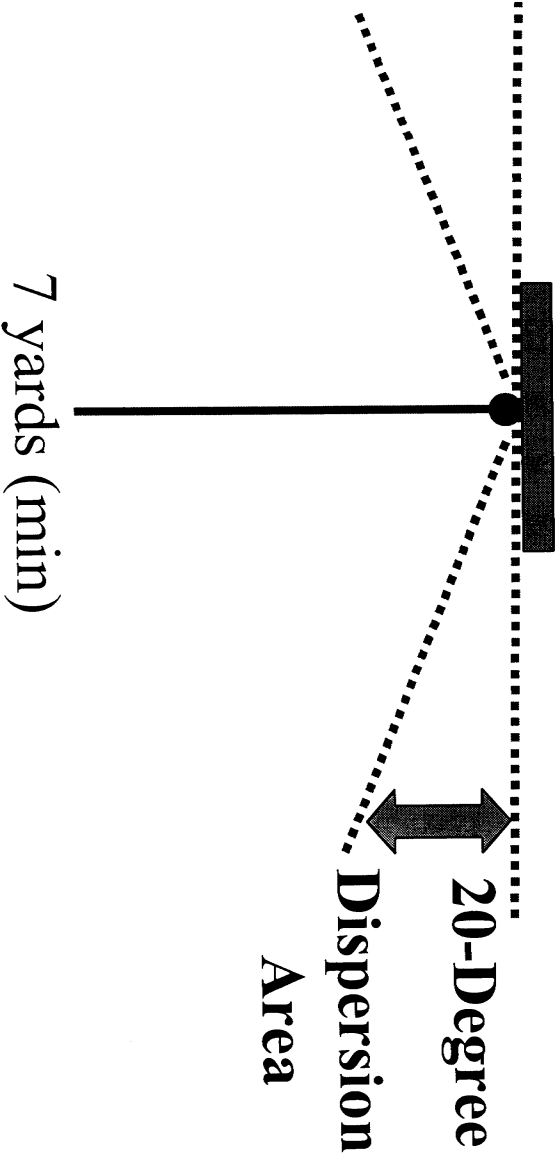
TRADOC FT MONROE VA

Steel Target 20 Degree Dispersion Area

Front
View

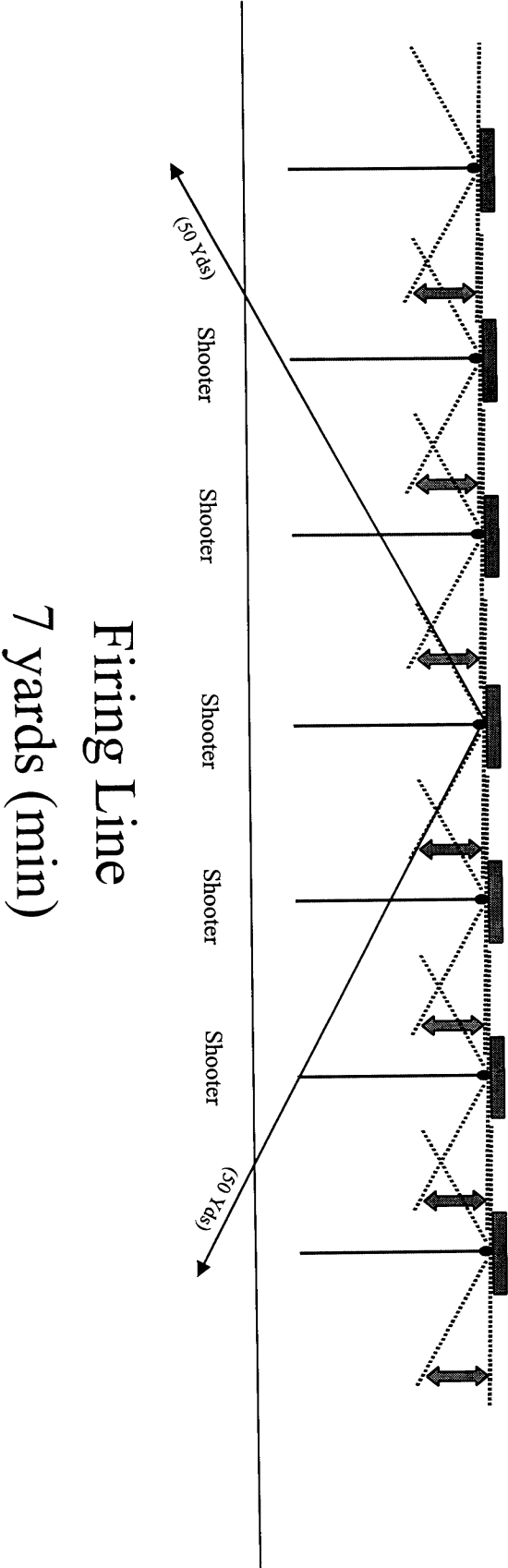


Top View



Steel Target 20 Degree Dispersion Area Consideration for Multiple Stationary SRT's Parallel to the Firing Line

Top View



Where the 20 degree dispersion area crosses the firing line, shooters could be hit by fragmentation from targets to the left and right. Careful consideration of the 20 degree safety zone must be taken into account for each target and each firing position.